United States Department of the Interior
U.S. Fish and Wildlife Service
2321 West Royal Palm Road, Suite 103
Phoenix, Arizona 85021
Telephone: (602) 242-0210 FAX: (602) 242-2513

AESO/FA September 18, 2003

Ms. Cindy Lester
Chief, Regulatory Branch
U.S. Army Corps of Engineers
3636 North Central Avenue, Suite 760
Phoenix, Arizona 85012-1936

Dear Ms. Lester:

The Fish and Wildlife Service thanks you for Public Notice 2001-01123-RWF (PN) dated September 12, 2003, issued by the U.S. Army Corps of Engineers. Cave Creek Unified School District has submitted an application for a Section 404 Clean Water Act (CWA) permit to build a high school, an elementary school, two middle schools, and support facilities on approximately 160 acres of Arizona State Trust Land in Phoenix, Maricopa County, Arizona (section 32, T5N, R4E). These comments are provided under the authority of and in accordance with the Fish and Wildlife Coordination Act (48 Stat. 401, as amended U.S.C. 661 et. seq.) (FWCA), but do not constitute our final review of the permit application under the FWCA.

The PN indicates the proposed project would impact 160 acres of Sonoran desertscrub. Of a total of 5.17 acres of jurisdictional washes on the project site, 3.54 acres would be directly affected by the discharge of dredged and/or fill material. We believe that the total impact of the development to be authorized by your agency should be assessed, including parts located on uplands above the ordinary high water mark. Your impact assessment should include direct, indirect, and cumulative effects, and all interrelated and interdependent activities. We believe the footprint of the permitted project that should be assessed by the Corps is, at minimum, the total 160 acres of development. The PN provides no information regarding the effects of adjacent development on jurisdictional washes not subject to a discharge, nor does it provide information on the effects of the larger project on a landscape scale. We suggest an assessment be conducted to determine the extent of secondary and cumulative effects as defined in the Section 404(b)(1) Guidelines (CFR 40 part 230.11).

Alterations to adjacent upland areas can impact the physical, chemical, and biological characteristics of adjacent and downstream jurisdictional waters and result in secondary effects through modification of ecological processes such as infiltration capacity, surface runoff,

underground water storage, sediment load, and organic matter input. For instance, the immediate hydrologic effects of upland development is an increase in the area of low or zero infiltration capacity, due to decreased energy dissipation provide by roughness (i.e. removal of plant cover) and increased impermeable surface (i.e. placement of asphalt and concrete). Temporary secondary effects can include increases in sediment yield and a decrease in the number of smaller order streams to convey sediment load, while long term secondary effects may include incision of arroyos and the degradation of existing channels resulting in channel downcutting or enlargement. The combined effects of adjacent upland development may include bank degradation, channel downcutting, increased flood events, decreased surface flow period, and reduced biological productivity.

We believe the Corps also has the authority and responsibility to consider all indirect effects of the discharge of dredged and fill material. The Section 404(b)(1) Guidelines direct the Corps to analyze the effects of Section 404 permitted activities on "surrounding areas" as well as "other wildlife" including resident and transient mammals, birds, reptiles, and amphibians (40 CFR Part 230.32). Additionally, the Regulations For Implementing The Procedural Provisions Of The National Environmental Policy Act (NEPA) (40 CFR, Parts 1502.16 and 1508.8), states the environmental consequences of an action include both direct effects and "Indirect effects, which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems."

Most transient wildlife species associated with aquatic ecosystems utilize adjacent upland areas for a large portion of their life cycle. For instance, Gila woodpeckers used saguaros located in adjacent uplands for nesting purposes while foraging extensively along washes. Also, bird community structure in a given habitat type depends, at least partially, on bird species composition and density in adjacent habitats. While desert mule deer utilize uplands, xeroriparian washes and their associated vegetation were also an important component of desert mule deer habitat. It has also been found that as riparian areas become increasingly isolated or fragmented, they rapidly lose riparian or upland herpetofaunal species. These concepts illustrate that an intimate biological and ecological relationship exists between adjacent uplands and waters, and that activities in uplands will necessarily have some level of effect on the biological function of adjacent jurisdictional waters. Modification or loss of upland areas may displace transient wildlife species, lower plant and animal species density and richness, disrupt the normal functions of the ecosystem, and lead to reductions in overall biological productivity and diversity.

The loss of upland vegetation communities associated with this development could have a negative impact on wildlife populations within and adjacent to the project area. Uplands provide movement corridors, nesting areas, and foraging areas for numerous wildlife species. The proposed modification could adversely affect population dynamics through habitat loss or fragmentation. This type of disturbance can disrupt intra- and interspecific wildlife interactions, resulting in population and community shifts. Animals could be displaced to adjacent areas that

may already be functioning at or near carrying capacity, resulting in increased competition, predation, disease transmission, and mortality. The associated development and increased human activity could place increased stress on local wildlife populations resulting in reduced fecundity and recruitment, adversely affecting local population viability.

Corps regulations (CFR 33, Appendix B to Part 325) state that the District Engineer is considered to have authority over portions of the project beyond the limits of jurisdiction "where the environmental consequences of the larger project are essentially products of the Corps permit action." If it is impracticable to completely avoid impacts to jurisdictional waters through bridge spans or upland buffers, we believe the proposed development could not occur "but for" the issuance of a Section 404 permit and it would be within Corps authority to extend the scope of analysis beyond the limits of the ordinary high water mark and assess interrelated and interdependent effects.

Corps regulations involving the Section 404 public interest review (33 CFR 320.4) state: "The benefits which reasonably may be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments." This balancing of detriments and benefits is also addressed in the Corps NEPA Implementation Procedures For The Regulatory Program (33 CFR Appendix B to Part 325). In regard to determining the appropriate scope of analysis these regulations state: "In all cases, the scope of analysis used for analyzing both impacts and alternatives should be the same scope of analysis used for analyzing the benefits of the proposal". We assume the public educational and recreational facilities provided by the proposed activity will be considered as a benefit in your public interest review. Accordingly, we believe the Corps should also consider the detriments, such as overall loss of wildlife habitat and aquatic ecosystem function, associated with development of those facilities.

The environmental assessment should include the potential effects of the entire development on Sonoran desertscrub vegetation communities and local and regional wildlife resources, including potential shifts in community structure; changes in diversity, relative abundance, and species richness; and long-term effects on population demographics and viability. This analysis should be more than a qualitative assessment, and use acceptable empirical methodologies to quantify and evaluate the expected impacts on biotic resources.

The PN states that the applicant is proposing to mitigate permanent losses of 3.54 acres of waters by planting vegetation along approximately 5,850 linear feet of avoided and reconstructed washes for a total of 8.81 acres. In accordance with existing regulations and procedures, mitigation measures should be developed that first address the issues of avoidance and minimization, and lastly compensation. For compensatory mitigation, measures should not only mitigate vegetative parameters such as canopy cover, biomass, and total volume, but should also mitigate changes or loss of animal diversity, abundance, density, and richness. Monitoring provisions and criteria should be developed to track the success of mitigation for animal populations as well as vegetation communities. We are not convinced that providing open space habitat islands within what will essentially be an urban landscape will adequately mitigate the expected detrimental affects on regional wildlife communities and the loss of habitat contiguity.

This would lead to a net loss of biological function within jurisdictional waters. We request that the proposed mitigation plan be provided to our office so that we may evaluate the plan and provide written recommendations.

The PN states the proposed project area contains habitat constituents similar to those that may be untilized by the endangered cactus ferruginous pygmy-owl (*Glaucidium brasilianum cactorum*) and that the Corps will consult with FWS to determine affects to the species. The Corps scope of analysis will need to consider the totality of project related effects as they relate to the pygmy-owl and habitat. This is consistent with the approach that your agency has agreed to implement in the "Guidelines To Ensure The Nationwide Permit Program Will Not Adversely Affect The Cactus Ferruginous Pygmy-Owl" adopted by our agencies on February 24, 2003.

The PN states that a preliminary determination has been made that an environmental impact statement (EIS) is not required for the proposed work. As such, we assume that your agency is preparing an environmental assessment (EA) in accordance with the National Environmental Policy Act (NEPA). We request that, when completed, the draft EA be submitted to our office so we may evaluate the significance of environmental impact and complete our review of the proposed project.

If we can be of further assistance please contact Mike Martinez (x224) or Don Metz (x217).

Sincerely,

/s/ Steven L. Spangle
Field Supervisor

cc: Regional Administrator, Environmental Protection Agency, San Francisco, CA
Supervisor, Project Evaluation Programs, Arizona Game and Fish Department, Phoenix, AZ

W:\Mike Martinez\Section32-pn.wpdcgg